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## **Faculty Working Papers**

"Rates of Return on Mutual  
Funds, 1960 - 1971"

Robert T. LeClair

#64

**College of Commerce and Business Administration**  
**University of Illinois at Urbana-Champaign**





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Financial journals during the past several years have published an increasing number of articles concerning different aspects of mutual funds. Some have been concerned with measuring fund performance and management,<sup>1</sup> while others have used the mutual fund industry as a standard of performance in comparing various investment strategies.<sup>2</sup> One recent article argues that while fund performance has not been exceptional by some standards, they do provide a legitimate "second best" alternative for the small investor who is financially unable to afford adequate diversification of his portfolio.<sup>3</sup>

Much of the analysis which has been presented regarding mutual funds has been based on relatively small samples of fund data. Until now, determining rates of return and variability of fund performance has been a time-consuming and tedious process. Many studies have been content to analyze one or a few holding periods in determining rates of return, and few have dealt adequately with the question of brokerage fees or the impact of taxes on capital gains and dividends.

As Lorie and Fisher have done for individual common stocks,<sup>4</sup> it is the purpose of this paper to provide more extensive data on mutual fund rates of return and variability over



many different holding periods and with differing assumptions in regard to the tax impact on investment returns. The data will also be classified by type of fund.

Basic data for the study <sup>was</sup> taken from the bank of mutual fund information compiled by J. Peter Williamson of Dartmouth. This data includes year-end net asset values, dividends, and capital gains distributions for some 329 funds. Data <sup>were</sup> was available on 167 of these funds for the years 1960 through 1971, and these funds were used in the rate of return analysis. The total assets of these funds as of December 31, 1971 were 44.3 billion dollars, or about 75% of total mutual fund assets.

Further breakdown of the data resulted in sub-sets of 100 growth funds, 32 income funds, 24 balanced funds, and a final category of 26 no-load funds which included funds from each of the first three categories. Eleven funds from the original group could not be categorized in this manner and were excluded from the analysis by type of fund. For comparative purposes, the Standard & Poor's 500 Stock Index was included in the study. This Index was analyzed as if it were a no-load mutual fund, paying income dividends each year, but with no capital gains dividends being paid.



Returns for the various holding periods were calculated using the internal-rate-of-return method discussed by Smith,<sup>5</sup> with brokerage fees(BF) held constant throughout at one percent, and for tax rates on dividend income(TD) of zero, 22% and 50%. Tax rates on capital gains distributions(TG) were zero, 11%, and 25% respectively. There was no reinvestment of either capital gains or income dividends, and the varying "load" charges of the funds were taken into account. The tables below show average rates of return for all possible yearly holding periods from 1960 through 1971 under the various tax rate assumptions. The standard deviation of returns is noted below in parentheses.

Table 1 provides summary statistics by class of fund for the longest possible holding period, eleven years, from the end of 1960 through 1971. Over this period the Standard & Poor's Average achieved the highest rate of return, 8.8%, in the tax-exempt category. As the S & P 500 was considered one fund, there is no standard deviation. It is worth noting that the rankings are the same regardless of tax considerations. This may not always be the case for shorter time periods, depending upon the breakdown of capital gains versus income dividends.

The twenty-six No-load funds were the highest ranking fund group, but this category included growth, income and balanced funds.



TABLE 1  
AVERAGE YIELDS OF MUTUAL FUNDS AND STANDARD &  
POOR'S 500 STOCK INDEX  
1960-1971

Type of Fund(#)	Tax Bracket(TD)		
	0%	22%	50%
S & P 500 Index	8.8%	7.6%	6.0%
No-Load Funds(26)	8.7 (2.5)	7.3 (2.1)	5.4 (1.7)
Growth Funds(100)	8.2 (2.6)	6.8 (2.3)	4.9 (1.9)
All Funds(167)	7.7 (2.3)	6.4 (2.0)	4.7 (1.7)
Income Funds(32)	7.5 (1.6)	6.2 (1.5)	4.6 (1.3)
Balanced Funds(24)	6.5 (1.2)	5.3 (1.1)	3.8 (0.9)





Not too surprisingly the growth funds turned in the highest average rate of return for groups classified by fund objective. Their eleven year average return of 8.2% may be compared with the return of 6.9% determined by Lorie and Fisher for investment in common stocks on the NYSE from January, 1926 through December, 1960, under similar assumptions of a tax-exempt status and without reinvestment of dividends.

Also of interest is the trend of dispersion of fund returns as measured by the standard deviation over the various time periods. Quite consistently in each of the tables, the standard deviation declines as the holding period increases. This would seem to indicate that funds tend to "average out" in their performance over long periods of time, and that few funds are able to maintain above average performance over long periods. It may be expected, therefore, that funds which perform well in one or two years may fall back to more average returns in other years.

For example, the average one-year standard deviation of the 100 Growth funds (the main diagonal of Table G-1) is 9.4%, while the average standard deviation of the longest possible holding periods (the last column of Table G-1) is only 4.2%. Similarly for all funds (Table A-1), the one year average standard deviation



is 9.3%, but only 3.9% for the longer time periods.

Also as might be expected, the greatest gains and losses (the highest and lowest average rates of return) occur over the shorter holding periods, normally one year. It would seem, therefore, that not only is the selection of an individual fund or funds important as contributing to above average returns, but also the timing of those purchases as well. Neither of these decisions, fund selection or timing, is a particularly easy one, however. Selecting individual funds from the many that are available, "switching" funds at the proper time, and getting out of all funds during certain periods are judgments that require a high level of decision analysis.



#### FOOTNOTES

<sup>1</sup>See for example, Jack L. Treynor, "How to Rate Management of Investment Funds," Harvard Business Review, Vol. 43, No. 1, (January-February, 1965); and Michael C. Jensen, "The Performance of Mutual Funds in the Period 1945 through 1964," Journal of Finance, Vol. 23, No. 2, (May, 1968).

<sup>2</sup>See Kalman J. Cohen and Jerry A. Pogue, "An Empirical Evaluation of Alternative Portfolio-Selection Models," Journal of Business, Vol. 40, No. 1, (April, 1967).

<sup>3</sup>Haim Levy and Marshall Sarnat, "Investment Performance in an Imperfect Securities Market and the Case for Mutual Funds," Financial Analysts Journal, Vol. 28, No. 2 (March-April, 1972).

<sup>4</sup>J. H. Lorie and L. Fisher, "Rates of Return on Investments in Common Stocks," Journal of Business, Vol. 37, No. 1 (January, 1964).

<sup>5</sup>For a detailed discussion of the use of internal-rate-of-return as a measure of ex post market performance see Keith Smith, Portfolio Management: Theoretical and Empirical Studies of Portfolio Decision-Making, (New York: Holt, Rinehart and Winston, Inc., 1971), chapters 8 and 10.





TABLE S-1

Matrix of Average Yields, 1960-1971Standard & Poor's 500 Index

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	25.4	7.2	11.9	13.0	12.8	9.0	10.8	10.8	8.8	8.3	8.8
1961		-9.7	4.9	8.5	9.4	5.5	8.1	8.5	6.4	6.2	6.8
1962			21.3	18.8	16.7	9.7	12.2	12.0	9.1	8.5	9.0
1963				15.2	13.8	5.5	9.6	9.8	6.8	6.4	7.2
1964					11.2	0.2	7.3	8.1	4.8	4.6	5.8
1965						-10.9	4.8	6.7	2.9	3.0	4.7
1966							22.5	16.6	7.9	6.9	8.2
1967								9.8	0.5	1.5	4.3
1968									-9.2	-3.1	2.1
1969										2.5	8.1
1970											13.0

BF = 0.01

TD = 0.00

TC = 0.00



TABLE S-2

Matrix of Average Yields, 1960-1971Standard & Poor's 500 Index

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	22.1	6.0	10.3	11.3	11.2	7.7	9.4	9.4	7.5	7.1	7.6
1961		-9.1	4.0	7.2	8.1	4.5	6.9	7.3	5.4	5.1	5.8
1962			18.4	16.4	14.6	8.3	10.6	10.5	7.8	7.3	7.8
1963				13.0	11.9	4.5	8.2	8.5	5.7	5.3	6.1
1964					9.5	-0.2	6.1	6.9	3.9	3.7	4.8
1965						-10.1	3.8	5.6	2.2	2.3	3.8
1966							19.5	14.5	6.7	5.7	7.0
1967								8.2	0.0	0.9	3.5
1968									-8.6	-3.2	1.5
1969										1.7	6.8
1970											11.1

BF = 0.01

TD = 0.22

TG = 0.11



TABLE S-3

Matrix of Average Yields, 1960-1971  
Standard & Poor's 500 Index

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	17.9	4.4	8.2	9.1	9.1	6.0	7.5	7.6	5.9	5.5	6.0
1961		-8.3	2.8	5.6	6.4	3.3	5.4	5.7	4.1	3.8	4.4
1962			14.8	13.3	11.9	6.4	8.5	8.4	6.1	5.6	6.1
1963				10.3	9.5	3.2	6.4	6.7	4.3	3.9	4.7
1964					7.3	-0.8	4.6	5.3	2.8	2.6	3.6
1965						-9.1	2.7	4.2	1.3	1.4	2.7
1966							15.7	11.6	5.0	4.2	5.3
1967								6.3	-0.6	0.2	2.4
1968									-7.9	-3.2	0.8
1969										0.8	5.1
1970											8.6

BF= 0.01  
TD= 0.50  
TC= 0.25



TABLE N-1  
Matrix of Average Mutual Fund Yields, 1960-1971  
26 No-Load Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	22.1 (6.3)	4.8 (4.6)	8.9 (4.1)	9.8 (3.6)	11.5 (4.0)	9.2 (3.6)	11.0 (3.7)	11.3 (3.5)	9.3 (2.9)	8.2 (2.7)	8.7 (2.5)
1961		-11.8 (5.7)	1.8 (4.2)	5.2 (3.4)	8.3 (3.9)	6.1 (3.5)	8.7 (3.6)	9.2 (3.4)	7.1 (2.7)	6.1 (2.4)	6.8 (2.2)
1962			17.5 (7.1)	15.2 (4.4)	16.5 (5.8)	11.6 (4.7)	14.0 (5.0)	13.9 (4.5)	10.8 (3.5)	9.2 (3.0)	9.9 (2.8)
1963				11.8 (3.1)	15.4 (6.1)	9.1 (4.7)	12.7 (5.5)	12.8 (4.8)	9.3 (3.6)	7.6 (3.1)	8.4 (2.9)
1964					18.4 (11.3)	7.1 (6.5)	12.7 (7.4)	12.9 (6.1)	8.4 (4.4)	6.5 (3.6)	7.6 (3.4)
1965						-4.5 (4.8)	9.1 (7.2)	10.5 (5.5)	5.3 (3.5)	3.5 (3.0)	5.3 (3.1)
1966							25.5 (16.2)	19.6 (9.0)	9.2 (4.2)	5.8 (3.6)	7.7 (3.7)
1967								13.0 (8.8)	0.6 (4.8)	-1.2 (5.2)	2.7 (4.2)
1968									-11.8 (7.7)	-8.6 (6.8)	-1.2 (5.4)
1969										-5.7 (8.4)	4.7 (5.6)
1970											16.1 (8.6)

BF = 0.01  
TD = 0.00  
TG = 0.00





TABLE N-2

Matrix of Average Mutual Fund Yields, 1960-197126 No-Load Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	18.9 ( 5.4)	3.7 ( 3.9)	7.4 ( 3.6)	8.3 ( 3.1)	9.8 ( 3.6)	7.7 ( 3.2)	9.4 ( 3.3)	9.6 ( 3.1)	7.7 ( 2.5)	6.7 ( 2.3)	7.3 ( 2.1)
1961		-11.0 ( 5.0)	1.2 ( 3.6)	4.2 ( 3.0)	7.0 ( 3.5)	4.9 ( 3.1)	7.3 ( 3.2)	7.8 ( 3.0)	5.8 ( 2.3)	4.9 ( 2.1)	5.6 ( 1.9)
1962			15.1 ( 6.3)	13.2 ( 3.9)	14.4 ( 5.2)	9.9 ( 4.2)	12.1 ( 4.5)	12.0 ( 4.1)	9.1 ( 3.1)	7.7 ( 2.6)	8.3 ( 2.4)
1963				10.0 ( 2.8)	13.2 ( 5.4)	7.5 ( 4.2)	10.8 ( 4.9)	10.9 ( 4.2)	7.6 ( 3.1)	6.1 ( 2.6)	7.0 ( 2.5)
1964					15.6 ( 9.8)	5.7 ( 5.7)	10.7 ( 6.5)	10.9 ( 5.3)	6.8 ( 3.7)	5.1 ( 3.0)	6.2 ( 2.9)
1965						-4.7 ( 4.3)	7.5 ( 6.2)	8.7 ( 4.7)	4.1 ( 2.9)	2.5 ( 2.5)	4.1 ( 2.7)
1966							21.8 (14.0)	16.8 ( 7.7)	7.4 ( 3.6)	4.5 ( 3.0)	6.3 ( 3.2)
1967								10.8 ( 7.6)	-0.1 ( 4.1)	-1.5 ( 4.4)	2.0 ( 3.6)
1968									-11.0 ( 6.8)	-7.9 ( 5.8)	-1.3 ( 4.7)
1969										-5.4 ( 7.4)	4.0 ( 4.9)
1970											14.1 ( 7.7)

BF = 0.01

TD = 0.22

TG = 0.11



TABLE N-3

Matrix of Average Mutual Fund Yields, 1960-197126 No-Load Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	14.9 ( 4.2)	2.2 ( 3.2)	5.6 ( 2.9)	6.3 ( 2.6)	7.7 ( 3.0)	5.8 ( 2.7)	7.3 ( 2.8)	7.5 ( 2.6)	5.7 ( 2.0)	4.9 ( 1.8)	5.4 ( 1.7)
1961		-10.0 ( 4.2)	0.4 ( 3.0)	3.0 ( 2.5)	5.3 ( 2.9)	3.5 ( 2.6)	5.5 ( 2.7)	6.0 ( 2.5)	4.2 ( 1.9)	3.3 ( 1.6)	4.0 ( 1.5)
1962			12.1 ( 5.3)	10.5 ( 3.3)	11.6 ( 4.5)	7.6 ( 3.6)	9.5 ( 3.9)	9.5 ( 3.5)	6.9 ( 2.5)	5.6 ( 2.1)	6.2 ( 1.9)
1963				7.6 ( 2.3)	10.4 ( 4.5)	5.5 ( 3.5)	8.3 ( 4.1)	8.5 ( 3.5)	5.5 ( 2.5)	4.2 ( 2.0)	5.1 ( 2.0)
1964					12.1 ( 7.9)	3.8 ( 4.7)	8.1 ( 5.4)	8.3 ( 4.3)	4.8 ( 2.9)	3.4 ( 2.3)	4.4 ( 2.3)
1965						-5.0 ( 3.8)	5.3 ( 5.0)	6.4 ( 3.7)	2.5 ( 2.3)	1.2 ( 2.0)	2.8 ( 2.2)
1966							17.0 ( 11.2)	13.1 ( 6.1)	5.2 ( 2.7)	2.9 ( 2.3)	4.6 ( 2.5)
1967								8.0 ( 6.1)	-0.9 ( 3.3)	-1.9 ( 3.5)	1.2 ( 2.9)
1968									-10.0 ( 5.7)	-7.1 ( 4.6)	-1.4 ( 3.8)
1969										-4.9 ( 6.2)	3.1 ( 4.1)
1970											11.5 ( 6.5)

BF = 0.01  
TD = 0.50  
TG = 0.25



TABLE G-1

Matrix of Average Mutual Fund Yields, 1960-1971100 Growth Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	17.0 ( 9.2)	-00.3 ( 5.4)	5.5 ( 5.0)	7.2 ( 4.5)	10.2 ( 4.1)	8.0 ( 3.7)	11.0 ( 3.8)	11.2 ( 3.5)	8.9 ( 2.9)	7.6 ( 2.7)	8.2 ( 2.6)
1961		-21.7 ( 7.4)	- 3.9 ( 5.7)	1.3 ( 4.7)	6.4 ( 4.0)	4.4 ( 3.6)	8.4 ( 3.8)	8.9 ( 3.4)	6.5 ( 2.7)	5.2 ( 2.6)	6.0 ( 2.4)
1962			10.9 ( 8.6)	11.9 ( 5.3)	15.9 ( 5.5)	11.0 ( 4.7)	15.0 ( 5.3)	14.6 ( 4.6)	11.0 ( 3.5)	9.1 ( 3.0)	9.8 ( 2.8)
1963				5.0 ( 5.5)	14.3 ( 5.8)	8.2 ( 4.9)	13.9 ( 6.2)	13.6 ( 5.2)	9.5 ( 3.7)	7.4 ( 3.0)	8.3 ( 2.9)
1964					16.2 (11.8)	5.9 ( 7.1)	14.4 ( 8.8)	13.9 ( 6.9)	8.7 ( 4.7)	6.3 ( 3.4)	7.6 ( 3.3)
1965						-10.8 ( 5.8)	9.2 ( 8.6)	10.2 ( 6.6)	4.4 ( 3.9)	2.2 ( 2.9)	4.2 ( 2.8)
1966							26.6 (18.2)	19.5 (10.3)	8.2 ( 5.0)	4.4 ( 3.5)	6.6 ( 3.2)
1967								4.7 ( 9.3)	-04.5 ( 5.7)	-05.7 ( 6.1)	-00.8 ( 4.8)
1968									-19.6 ( 8.3)	-14.3 ( 8.3)	-05.3 ( 6.3)
1969										-14.4 (11.0)	-00.1 ( 6.6)
1970											9.6 ( 8.2)

BF = 0.01

TD = 0.00

TG = 0.00





TABLE C-2

Matrix of Average Mutual Fund Yields, 1960-1971100 Growth Funds

Purchased	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
At End of											
1960	13.8 ( 8.2)	-1.1 ( 4.8)	4.3 ( 4.5)	5.9 ( 4.0)	8.7 ( 3.7)	6.7 ( 3.3)	9.4 ( 3.5)	9.6 ( 3.2)	7.4 ( 2.6)	6.2 ( 2.4)	6.8 ( 2.3)
1961	-	-20.3 ( 6.7)	-4.1 ( 5.1)	0.6 ( 4.2)	5.2 ( 3.6)	3.4 ( 3.2)	7.0 ( 3.4)	7.5 ( 3.0)	5.2 ( 2.4)	4.0 ( 2.3)	4.8 ( 2.2)
1962			8.6 ( 7.8)	9.9 ( 4.8)	13.7 ( 5.0)	9.2 ( 4.2)	12.9 ( 4.9)	12.6 ( 4.2)	9.2 ( 3.2)	7.5 ( 2.6)	8.1 ( 2.5)
1963				3.3 ( 5.1)	11.9 ( 5.3)	6.5 ( 4.3)	11.8 ( 5.6)	11.5 ( 4.7)	7.7 ( 3.3)	5.8 ( 2.6)	6.7 ( 2.5)
1964					13.0 (10.4)	4.2 ( 6.2)	12.1 ( 7.8)	11.7 ( 6.2)	6.9 ( 4.1)	4.8 ( 2.9)	6.0 ( 2.8)
1965						-11.0 ( 5.3)	7.1 ( 7.5)	8.1 ( 5.8)	3.0 ( 3.4)	1.1 ( 2.5)	3.0 ( 2.5)
1966							22.0 (15.9)	16.2 ( 9.1)	6.2 ( 4.3)	2.9 ( 3.0)	5.0 ( 2.8)
1967								2.6 ( 8.4)	-5.1 ( 5.1)	-5.8 ( 5.3)	-1.4 ( 4.2)
1968									-18.7 ( 7.5)	-13.3 ( 7.2)	-5.2 ( 5.5)
1969										-13.8 ( 9.8)	-0.6 ( 5.8)
1970											7.6 ( 7.5)

BF = 0.01  
TD = 0.22  
TG = 0.11



TABLE G-3

Matrix of Average Mutual Fund Yields, 1960-1971100 Growth Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	9.8 ( 7.0)	-2.1 ( 4.1)	2.7 ( 3.9)	4.2 ( 3.4)	6.7 ( 3.2)	4.9 ( 2.9)	7.3 ( 3.1)	7.4 ( 2.8)	5.4 ( 2.2)	4.3 ( 2.0)	4.9 ( 1.9)
1961		-18.7 ( 5.9)	-4.4 ( 4.3)	-0.3 ( 3.6)	3.7 ( 3.1)	2.1 ( 2.7)	5.2 ( 2.9)	5.6 ( 2.6)	3.5 ( 2.0)	2.5 ( 1.9)	3.3 ( 1.8)
1962			5.7 ( 6.8)	7.4 ( 4.1)	10.8 ( 4.4)	6.9 ( 3.6)	10.2 ( 4.3)	9.9 ( 3.7)	6.8 ( 2.7)	5.2 ( 2.2)	6.0 ( 2.1)
1963				1.0 ( 4.6)	8.9 ( 4.5)	4.4 ( 3.6)	9.0 ( 4.8)	8.8 ( 4.0)	5.4 ( 2.7)	3.7 ( 2.1)	4.7 ( 2.0)
1964					9.1 ( 8.7)	2.1 ( 5.1)	9.0 ( 6.6)	8.7 ( 5.2)	4.5 ( 3.3)	2.8 ( 2.3)	4.0 ( 2.3)
1965						-11.3 ( 4.7)	4.5 ( 6.2)	5.5 ( 4.8)	1.2 ( 2.3)	-0.3 ( 2.1)	1.5 ( 2.1)
1966							16.2 ( 13.0)	12.0 ( 7.5)	3.6 ( 3.5)	1.1 ( 2.5)	3.1 ( 2.3)
1967								-0.1 ( 7.3)	-5.9 ( 4.4)	-5.9 ( 4.4)	-2.0 ( 3.5)
1968									-17.6 ( 6.6)	-12.1 ( 5.9)	-5.1 ( 4.5)
1969										-13.1 ( 8.4)	-1.4 ( 4.9)
1970											5.0 ( 6.6)

BF = 0.01

TD = 0.50

TG = 0.25



### Matrix of Average Mutual Fund Yields, 1960-1971

[illegible]

BF	=	0.01
TD	=	0.00
TG	=	0.00
N	=	All Funds

10.2	4.0
(10.3)	(6.0)

 $(8.3, 7.5)$



### Matrix of Average Mutual Fund Yields, 1960-1971

## Purchased at

[illegible]





TABLE A-3

Matrix of Average Mutual Fund Yields, 1960-1971All Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	9.3 ( 9.3)	- 0.7 ( 4.7)	3.3 ( 3.9)	4.7 ( 3.2)	6.2 ( 2.8)	4.3 ( 2.4)	6.3 ( 2.9)	6.7 ( 2.5)	4.8 ( 2.0)	4.1 ( 1.7)	4.7 ( 1.7)
1961		-15.9 ( 6.1)	- 3.3 ( 3.8)	0.4 ( 3.1)	3.3 ( 2.8)	1.6 ( 2.6)	4.2 ( 3.0)	4.9 ( 2.6)	3.0 ( 2.0)	2.4 ( 1.8)	3.1 ( 1.7)
1962			4.3 ( 5.9)	6.6 ( 3.6)	8.8 ( 4.4)	5.2 ( 3.7)	8.0 ( 4.7)	8.3 ( 3.8)	5.6 ( 2.9)	4.5 ( 2.2)	5.2 ( 2.1)
1963				1.1 ( 4.4)	6.8 ( 4.8)	2.7 ( 3.9)	6.6 ( 5.2)	7.2 ( 4.1)	4.2 ( 2.9)	3.2 ( 2.1)	4.1 ( 2.0)
1964					4.9 ( 8.9)	- 0.4 ( 5.4)	5.9 ( 6.9)	6.7 ( 5.1)	3.2 ( 3.4)	2.1 ( 2.3)	3.3 ( 2.2)
1965						-12.1 ( 4.8)	2.2 ( 6.3)	4.4 ( 4.5)	0.6 ( 2.8)	- 0.2 ( 2.0)	1.5 ( 1.8)
1966							11.9 (12.4)	10.7 ( 6.8)	3.2 ( 3.4)	1.6 ( 2.4)	3.4 ( 2.1)
1967								1.7 ( 6.9)	- 4.6 ( 4.4)	- 4.1 ( 4.3)	- 0.7 ( 3.4)
1968									-16.9 ( 6.4)	-10.4 ( 5.4)	- 4.0 ( 3.9)
1969										-10.0 ( 7.8)	0.0 ( 4.5)
1970											4.0 ( 6.1)

BF = 0.01  
TD = 0.50  
TG = 0.25  
N = 167



TABLE I-1

Matrix of Average Mutual Fund Yields, 1960-1971  
32 Income Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	12.0 ( 5.0)	2.7 (2.6)	6.8 ( 2.1)	8.4 ( 2.1)	9.2 ( 2.1)	6.7 ( 1.9)	8.4 ( 1.9)	9.4 ( 2.0)	7.3 ( 1.8)	7.1 ( 1.8)	7.5 ( 1.6)
1961		-13.7 ( 5.3)	-0.3 ( 3.4)	4.1 ( 2.9)	6.0 ( 2.7)	3.5 ( 2.4)	5.9 ( 2.3)	7.4 ( 2.3)	5.2 ( 2.0)	5.1 ( 2.0)	5.7 ( 1.8)
1962			7.1 ( 3.5)	10.5 ( 2.7)	11.3 ( 2.7)	6.8 ( 2.2)	9.2 ( 2.4)	10.6 ( 2.5)	7.5 ( 2.1)	7.2 ( 2.0)	7.8 ( 1.8)
1963				5.2 ( 3.3)	8.9 ( 3.1)	3.5 ( 2.5)	7.4 ( 2.7)	9.3 ( 2.9)	5.9 ( 2.4)	5.7 ( 2.1)	6.5 ( 1.9)
1964					4.0 ( 4.4)	-1.7 ( 3.0)	5.1 ( 3.1)	8.1 ( 3.3)	4.0 ( 2.6)	4.1 ( 2.2)	5.2 ( 2.0)
1965						-14.8 ( 3.6)	1.2 ( 3.0)	6.5 ( 3.3)	1.6 ( 2.5)	2.1 ( 2.0)	3.7 ( 1.8)
1966							12.5 ( 5.7)	15.7 ( 5.1)	5.8 ( 3.3)	5.5 ( 2.6)	6.9 ( 2.2)
1967								9.8 ( 6.6)	-2.1 ( 3.8)	-0.3 ( 2.8)	2.8 ( 2.3)
1968									-20.5 ( 5.0)	-9.6 ( 3.3)	-2.7 ( 2.6)
1969										-4.0 ( 5.2)	4.5 ( 3.5)
1970											5.3 ( 4.2)

BF = 0.01  
TD = 0.00  
TG = 0.00



TABLE I-2

Matrix of Average Mutual Fund Yields, 1960-1971  
32 Income Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	9.4 (4.4)	1.5 (2.3)	5.4 (1.9)	7.0 (1.9)	7.7 (1.9)	5.4 (1.7)	7.0 (1.7)	7.9 (1.8)	6.0 (1.6)	5.8 (1.6)	6.2 (1.5)
1961		-13.4 (4.8)	-10.0 (3.1)	3.0 (2.6)	4.8 (2.5)	2.6 (2.2)	4.8 (2.1)	6.1 (2.1)	4.1 (1.8)	4.0 (1.8)	4.6 (1.6)
1962			5.2 (3.2)	8.6 (2.4)	9.5 (2.5)	5.4 (2.0)	7.7 (2.1)	9.0 (2.3)	6.2 (1.9)	5.9 (1.7)	6.4 (1.6)
1963				3.4 (3.1)	7.1 (2.9)	2.4 (2.2)	6.0 (2.4)	7.8 (2.5)	4.6 (2.0)	4.5 (1.8)	5.2 (1.7)
1964					2.3 (4.1)	-2.4 (2.7)	3.8 (2.8)	6.6 (2.9)	2.9 (2.3)	3.0 (1.9)	4.0 (1.7)
1965						-14.5 (3.4)	0.2 (2.7)	5.1 (2.9)	0.8 (2.2)	1.2 (1.7)	2.7 (1.5)
1966							9.8 (4.9)	13.1 (4.5)	4.3 (2.8)	4.1 (2.2)	5.5 (1.9)
1967								7.3 (5.8)	-2.9 (3.4)	-1.0 (2.4)	1.9 (2.0)
1968									-19.5 (4.6)	-9.2 (2.9)	-3.0 (2.3)
1969										-4.6 (4.7)	3.3 (3.2)
1970											3.6 (3.8)

BF = 0.01  
 TD = 0.22  
 TG = 0.11



TABLE I-3  
Matrix of Average Mutual Fund Yields, 1960-1971  
32 Income Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	6.1 ( 3.7)	0.2 ( 2.0)	3.7 ( 1.7)	5.1 ( 1.7)	5.8 ( 1.7)	3.8 ( 1.5)	5.2 ( 1.5)	6.1 ( 1.6)	4.3 ( 1.3)	4.2 ( 1.3)	4.6 ( 1.3)
1961		-12.9 ( 4.3)	-1.9 ( 2.7)	1.7 ( 2.3)	3.3 ( 2.2)	1.4 ( 1.9)	3.3 ( 1.8)	4.5 ( 1.8)	2.7 ( 1.5)	2.7 ( 1.5)	3.2 ( 1.4)
1962			2.6 ( 2.9)	6.2 ( 2.2)	7.1 ( 2.2)	3.6 ( 1.8)	5.7 ( 1.8)	6.9 ( 1.9)	4.4 ( 1.5)	4.2 ( 1.4)	4.7 ( 1.3)
1963				1.1 ( 2.8)	4.8 ( 2.5)	1.0 ( 1.9)	4.1 ( 2.0)	5.8 ( 2.1)	3.0 ( 1.6)	2.9 ( 1.5)	3.7 ( 1.3)
1964					0.1 ( 3.6)	-3.3 ( 2.4)	2.2 ( 2.3)	4.7 ( 2.4)	1.5 ( 1.8)	1.7 ( 1.5)	2.6 ( 1.4)
1965						-14.0 ( 3.3)	-10.0 ( 2.3)	3.2 ( 2.4)	-0.4 ( 1.7)	0.1 ( 1.3)	1.5 ( 1.2)
1966							6.3 ( 4.0)	9.8 ( 3.6)	2.4 ( 2.2)	2.5 ( 1.7)	3.8 ( 1.5)
1967								4.2 ( 4.8)	-3.8 ( 2.8)	-1.8 ( 2.0)	0.7 ( 1.7)
1968									-18.3 ( 4.1)	-8.8 ( 2.5)	-3.4 ( 1.9)
1969										-5.4 ( 4.1)	1.9 ( 2.7)
1970											1.5 ( 3.5)

BF = 0.01  
TD = 0.50  
TG = 0.25





TABLE B-1

Matrix of Average Mutual Fund Yields, 1960-197124 Balanced Funds

Purchased AT End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	10.9 (6.4)	2.7 (2.2)	5.9 (1.7)	7.3 (1.5)	7.9 (1.3)	5.9 (1.2)	7.3 (1.9)	8.0 (1.9)	6.2 (1.4)	6.0 (1.2)	6.5 (1.2)
1961		-11.8 (4.5)	-0.4 (2.6)	3.4 (2.1)	5.0 (2.0)	3.1 (1.7)	5.1 (2.5)	6.2 (2.6)	4.3 (2.0)	4.3 (1.8)	4.9 (1.8)
1962			5.5 (4.5)	8.7 (2.7)	9.3 (2.5)	5.8 (2.1)	7.9 (3.1)	8.7 (3.1)	6.2 (2.2)	6.0 (1.9)	6.6 (1.9)
1963				4.5 (3.7)	7.4 (2.9)	3.2 (2.2)	6.5 (3.6)	7.8 (3.5)	4.9 (2.4)	4.8 (2.0)	5.6 (2.0)
1964					3.0 (5.1)	-1.2 (3.0)	4.6 (4.7)	6.7 (4.3)	3.3 (2.8)	3.4 (2.3)	4.5 (2.2)
1965						-12.1 (3.5)	1.7 (5.2)	5.4 (4.5)	1.3 (2.6)	1.8 (2.1)	3.4 (2.0)
1966							10.8 (10.7)	12.3 (7.0)	4.3 (3.4)	4.3 (2.7)	5.9 (2.4)
1967								6.3 (5.2)	-2.8 (3.3)	-0.7 (3.0)	2.3 (2.4)
1968									-17.7 (6.5)	-8.0 (4.4)	-1.7 (3.2)
1969										-3.1 (4.3)	4.8 (2.5)
1970											6.1 (5.0)

BF = 0.01

TD = 0.00

TG = 0.00



TABLE B-2

Matrix of Average Mutual Fund Yields, 1960-197124 Balanced Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	8.5 ( 5.9)	1.6 ( 2.0)	4.6 ( 1.6)	6.0 ( 1.4)	6.5 ( 1.2)	4.7 ( 1.1)	6.0 ( 1.7)	6.6 ( 1.7)	5.0 ( 1.2)	4.8 ( 1.1)	5.3 ( 1.1)
1961		-11.6 ( 3.9)	-1.1 ( 2.3)	2.4 ( 1.9)	3.9 ( 1.8)	2.2 ( 1.6)	4.1 ( 2.3)	5.0 ( 2.4)	3.3 ( 1.7)	3.3 ( 1.6)	3.9 ( 1.5)
1962			3.8 ( 4.3)	7.0 ( 2.6)	7.7 ( 2.3)	4.5 ( 1.9)	6.5 ( 2.8)	7.3 ( 2.8)	5.0 ( 1.9)	4.8 ( 1.6)	5.4 ( 1.6)
1963				2.9 ( 3.6)	5.8 ( 2.7)	2.2 ( 2.0)	5.2 ( 3.2)	6.4 ( 3.1)	3.7 ( 2.0)	3.7 ( 1.7)	4.5 ( 1.7)
1964					1.5 ( 4.7)	-1.9 ( 2.7)	3.4 ( 4.1)	5.3 ( 3.7)	2.2 ( 2.4)	2.4 ( 1.9)	3.5 ( 1.9)
1965						-11.9 ( 3.3)	0.7 ( 4.6)	4.1 ( 3.9)	0.4 ( 2.2)	0.9 ( 1.7)	2.4 ( 1.7)
1966							8.3 ( 9.5)	10.1 ( 6.1)	3.0 ( 2.9)	3.1 ( 2.3)	4.6 ( 2.1)
1967								4.2 ( 4.7)	-3.4 ( 3.1)	-1.4 ( 2.7)	1.5 ( 2.2)
1968									-17.0 ( 6.1)	-7.8 ( 4.0)	-2.1 ( 2.9)
1969										-3.8 ( 4.0)	3.6 ( 2.3)
1970											4.5 ( 4.8)

BF = 0.01

TD = 0.22

TG = 0.11



TABLE B-3

Matrix of Average Mutual Fund Yields, 1960-197124 Balanced Funds

Purchased at End of	Sold at End of										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
1960	5.4 ( 5.3)	0.2 ( 1.8)	3.0 ( 1.4)	4.2 ( 1.2)	4.8 ( 1.1)	3.2 ( 1.0)	4.4 ( 1.5)	4.9 ( 1.5)	3.4 ( 1.0)	3.3 ( 0.9)	3.8 ( 0.9)
1961		-11.3 ( 3.4)	-1.9 ( 2.0)	1.2 ( 1.7)	2.6 ( 1.6)	1.1 ( 1.3)	2.8 ( 2.0)	3.5 ( 2.0)	2.0 ( 1.4)	2.0 ( 1.2)	2.6 ( 1.2)
1962			1.6 ( 4.0)	4.9 ( 2.4)	5.6 ( 2.0)	3.0 ( 1.6)	4.7 ( 2.4)	5.4 ( 2.3)	3.3 ( 1.5)	3.2 ( 1.3)	3.8 ( 1.3)
1963				0.8 ( 3.5)	3.8 ( 2.4)	0.9 ( 1.7)	3.5 ( 2.7)	4.6 ( 2.6)	2.2 ( 1.6)	2.2 ( 1.3)	3.0 ( 1.3)
1964					-0.4 ( 4.2)	-2.8 ( 2.3)	1.9 ( 3.4)	3.6 ( 3.1)	0.9 ( 1.8)	1.1 ( 1.5)	2.1 ( 1.4)
1965						-11.6 ( 3.2)	-0.6 ( 3.8)	2.4 ( 3.2)	-0.6 ( 1.7)	-0.1 ( 1.3)	1.2 ( 1.3)
1966							5.2 ( 7.9)	7.2 ( 5.0)	1.3 ( 2.3)	1.5 ( 1.8)	3.0 ( 1.6)
1967								1.7 ( 4.1)	-4.2 ( 2.8)	-2.2 ( 2.4)	0.4 ( 1.9)
1968									-16.0 ( 5.5)	-7.6 ( 3.4)	-2.5 ( 2.5)
1969										-4.7 ( 3.6)	2.1 ( 2.1)
1970											2.4 ( 4.6)

BF = 0.01

TD = 0.50

TG = 0.25















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